



PO Box 2620  
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## Letter of Transmittal

**To:** Chris Williams  
VTRANS  
61 VALLEY VIEW  
MENDON, VT 05701  
Ph: (802)786-3812 Fax: (802)786-3810

**Transmittal #:** 2

**Date:** 4/21/2015

**Job:** M092 Rochester, VT Bridges

**Subject:** Submittal

**WE ARE SENDING YOU**

- |   |  |   |   |
|---|--|---|---|
| <input type="checkbox"/> Attached       | <input type="checkbox"/> Under separate cover via the following items: |   |   |
| <input type="checkbox"/> Shop drawings  | <input type="checkbox"/> Prints  | <input type="checkbox"/> Plans          | <input type="checkbox"/> Samples              |
| <input type="checkbox"/> Copy of letter | <input type="checkbox"/> Change order                                  | <input type="checkbox"/> Specifications | <input checked="" type="checkbox"/> Submittal |

Document Type	Copies	Date	No.	Description
Submittal	1		4 Rev 0	2015 Mixes

**THESE ARE TRANSMITTED as checked below:**

- |  |   |   |
|--|---|---|
| <input checked="" type="checkbox"/> For approval           | <input type="checkbox"/> Approved as submitted            | <input type="checkbox"/> Resubmit ___ copies for approval   |
| <input checked="" type="checkbox"/> For your use           | <input type="checkbox"/> Approved as noted                | <input type="checkbox"/> Submit ___ copies for distribution |
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| <input checked="" type="checkbox"/> For review and comment | <input type="checkbox"/> Other                            |   |
| <input type="checkbox"/> FOR BIDS DUE                      | <input type="checkbox"/> PRINTS RETURNED AFTER LOAN TO US |   |

**Remarks:** Please find attached mix designs for 2015

**Copy To:**

**From:** MIKE GARN (W.M. SCHULTZ CONSTRUCTION)

**Signature:** 

## STRUCTURAL CONCRETE MIX DESIGN SUBMISSION

Mix designs are valid for a 12 month period from date of approval or unless there is a change in material, material property or design parameter.

Maximum Water/Cementitious Ratio	0.44			
Maximum Water (gal/cy)	32.2			
Slump Min/Max (inch)		min	7.0	max
Air Content Min/Max (%)	5.5	min	8.5	max
Design Unit Wt. (lb/cf)	138.47			

Notes:

STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
MATERIAL AND RESEARCH SECTION - STRUCTURAL CONCRETE UNIT

STRUCTURAL CONCRETE MIX DESIGN SUBMISSION

Concrete class: 2013+ Class A  
Additional Description: With Fly Ash  
Ready Mix Supplier: CARRARA, JP & SONS INC - E MIDDLEBURY, VT  
Designed By: Chuck French  
Design strength: 4000 PSI  
Mix Design Style: Conventional  
Agg weight - SSD or Dry: SSD

Agency Use Only	
Mix ID	SC00-A-0
Mix Design #	
Approved by	
Approved Date	
Spec Book Year	2011

Mix designs are valid for a 12 month period from date of approval or unless there is a change in material, material property or design parameter.

<b>Cement:</b>	Specific Gravity	<u>3.150</u>	<u>528</u> lb/cy	<u>2.69</u> cf
701.02 Source: <u>LEHIGH NORTHEAST CEMENT CO - GLENSFALLS, NY</u>				
Brand Name: <u>Type II</u>				
<b>Cement Type III:</b>	Specific Gravity		lb/cy	0.00 cf
701.04 Source: _____				
Brand Name: _____				
<b>Blended Cement:</b>	Specific Gravity		lb/cy	0.00 cf
701.06 Source: _____				
Brand Name: _____				
<b>Cement with Slag:</b>	Specific Gravity		lb/cy	0.00 cf
701.07 Source: _____				
Brand Name: _____				
<b>Pozzolan:</b>	Specific Gravity		lb/cy	0.00 cf
725.03(a) Source: _____				
Brand Name: _____				
<b>Fly Ash:</b>	Specific Gravity	<u>2.320</u>	<u>132</u> lb/cy	<u>0.91</u> cf
725.03(a) Source: <u>HEADWATERS RESOURCES - BRAYTON POINT, MA</u>				
Brand Name: <u>Class F</u>				
<b>Silica Fume:</b>	Specific Gravity		lb/cy	0.00 cf
725.03(b) Source: _____				
Brand Name: _____				
<b>Slag:</b>	Specific Gravity		lb/cy	0.00 cf
725.03(c) Source: _____				
Brand Name: _____				
<b>Water</b>				
<b>Air Content Target</b>		<u>32</u> gals	<u>267</u> lb/cy	<u>4.28</u> cf
		<u>7.0</u> %		<u>1.89</u> cf
<b>Coarse Aggregate 3/8"</b>	Absorption		lb/cy	0.00 cf
704.02A Source: _____				
<b>Coarse Aggregate 3/4"</b>	Absorption	<u>1.24</u>	Specific Gravity	<u>2.580</u>
704.02B Source: <u>CARRARA JP - E MIDDLEBURY, VT</u>			<u>1710</u> lb/cy	<u>10.62</u> cf
<b>Coarse Aggregate 1 1/2"</b>	Absorption		Specific Gravity	
704.02C Source: _____			lb/cy	0.00 cf
<b>Fine Aggregate:</b>	Absorption	<u>0.98</u>	Specific Gravity	<u>2.613</u>
704.01 Source: <u>CARRARA JP - E MIDDLEBURY, VT</u>			<u>1078</u> lb/cy	<u>6.61</u> cf
			Fineness Modulus	
<b>Air Entrainment Admixture</b>			Specific Gravity	
725.02(b) Source: <u>W.R. GRACE &amp; CO. - CAMBRIDGE, MA</u>			<u>4.1</u> oz/cy	
Brand Name: <u>Darex II</u>				
<b>Retarder Admixture:</b>			Specific Gravity	
725.02(c) Source: <u>W.R. GRACE &amp; CO. - CAMBRIDGE, MA</u>			<u>3</u> oz/cwt	
Brand Name: <u>Daratard 17</u>				
<b>High Range Water Reducer Admixture:</b>			Specific Gravity	
725.02(h) Source: <u>W.R. GRACE &amp; CO. - CAMBRIDGE, MA</u>			<u>6</u> oz/cwt	
Brand Name: <u>ADVA 140M</u>				
<b>Other Admixtures:</b>			Specific Gravity	
Source: _____				0.00 cf
Brand Name: _____				
Source: _____			Specific Gravity	
Brand Name: _____				0.00 cf
Source: _____			Specific Gravity	
Brand Name: _____				0.00 cf
<b>TOTAL</b>		<u>46.513</u>	<u>3715</u> lb	<u>27.00</u> cf
Maximum Water/Cementitious Ratio <u>0.44</u>				
Maximum Water (gal/cy) <u>34.8</u>				
Slump Min/Max (inch) <u>2.0</u> min <u>4.0</u> max				
Air Content Min/Max (%) <u>5.5</u> min <u>8.5</u> max				
Design Unit Wt. (lb/cf) <u>137.59</u>				

Notes:

STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
MATERIAL AND RESEARCH SECTION - STRUCTURAL CONCRETE UNIT

STRUCTURAL CONCRETE MIX DESIGN SUBMISSION

Agency Use Only	
Mix ID	HP00-B-0
Mix Design #	
Approved by	
Approved Date	
Spec Book Year	2011

Mix designs are valid for a 12 month period from date of approval or unless there is a change in material, material property or design parameter.

Concrete class: <u>HPC B</u>				
Additional Description _____				
Ready Mix Supplier: <u>CARRARA, JP &amp; SONS INC - E MIDDLEBURY, VT</u>				
Designed By <u>Chuck French</u>				
Design strength	<u>3500</u>	PSI		
Mix Design Style: <u>Conventional</u>				
Agg weight - SSD or Dry: <u>SSD</u>				
<b>Cement:</b>		Specific Gravity	_____ lb/cy	<u>0.00</u> cf
701.02	Source: _____			
	Brand Name: _____			
<b>Cement Type III:</b>		Specific Gravity	_____ lb/cy	<u>0.00</u> cf
701.04	Source: _____			
	Brand Name: _____			
<b>Blended Cement:</b>		Specific Gravity	<u>3.020</u> lb/cy	<u>2.99</u> cf
701.06	Source: <u>LAFARGE - TERCEM - MONTREAL, EAST PLANT</u>			
	Brand Name: <u>Tercem 3000</u>			
<b>Cement with Slag:</b>		Specific Gravity	_____ lb/cy	<u>0.00</u> cf
701.07	Source: _____			
	Brand Name: _____			
<b>Pozzolan:</b>		Specific Gravity	_____ lb/cy	<u>0.00</u> cf
725.03(a)	Source: _____			
	Brand Name: _____			
<b>Fly Ash:</b>		Specific Gravity	_____ lb/cy	<u>0.00</u> cf
725.03(a)	Source: _____			
	Brand Name: _____			
<b>Silica Fume:</b>		Specific Gravity	_____ lb/cy	<u>0.00</u> cf
725.03(b)	Source: _____			
	Brand Name: _____			
<b>Slag:</b>		Specific Gravity	_____ lb/cy	<u>0.00</u> cf
725.03(c)	Source: _____			
	Brand Name: _____			
<b>Water</b>			<u>31</u> gals	<u>258.7</u> lb/cy
<b>Air Content Target</b>			<u>7.0</u> %	<u>4.14</u> cf
<b>Coarse Aggregate 3/8"</b>	Absorption _____	Specific Gravity	_____ lb/cy	<u>0.00</u> cf
704.02A	Source: _____			
<b>Coarse Aggregate 3/4"</b>	Absorption <u>1.24</u>	Specific Gravity <u>2.580</u>	<u>820</u> lb/cy	<u>5.09</u> cf
704.02B	Source: <u>CARRARA JP - E MIDDLEBURY, VT</u>			
<b>Coarse Aggregate 1 1/2"</b>	Absorption <u>1.24</u>	Specific Gravity <u>2.580</u>	<u>820</u> lb/cy	<u>5.09</u> cf
704.02C	Source: _____			
<b>Fine Aggregate:</b>	Absorption <u>0.98</u>	Specific Gravity <u>2.613</u>	<u>1272</u> lb/cy	<u>7.80</u> cf
704.01	Source: <u>CARRARA JP - E MIDDLEBURY, VT</u>	Fineness Modulus _____		
<b>Air Entrainment Admixture</b>		Specific Gravity	_____ oz/cy	
725.02(b)	Source: <u>W.R. GRACE &amp; CO. - CAMBRIDGE, MA</u>			
	Brand Name: <u>Darex II</u>			
<b>Retarder Admixture:</b>		Specific Gravity	_____ oz/cwt	
725.02(c)	Source: <u>W.R. GRACE &amp; CO. - CAMBRIDGE, MA</u>			
	Brand Name: <u>Daratard 17</u>			
<b>High Range Water Reducer Admixture:</b>		Specific Gravity	_____ oz/cwt	
725.02(h)	Source: <u>W.R. GRACE &amp; CO. - CAMBRIDGE, MA</u>			
	Brand Name: <u>ADVA 140M</u>			
<b>Other Admixtures:</b>		Specific Gravity	_____   _____	<u>0.00</u> cf
	Source: _____			
	Brand Name: _____			
	Source: _____	Specific Gravity	_____   _____	<u>0.00</u> cf
	Brand Name: _____			
	Source: _____	Specific Gravity	_____   _____	<u>0.00</u> cf
	Brand Name: _____			
<b>TOTAL</b>		<u>48.793</u>	<u>3735</u> lb	<u>27.00</u> cf
Maximum Water/Cementitious Ratio		<u>0.49</u>		
Maximum Water (gal/cy)		<u>33.1</u>		
Slump Min/Max (inch)		_____ min	<u>7.0</u> max	
Air Content Min/Max (%)		<u>5.5</u> min	<u>8.5</u> max	
Design Unit Wt. (lb/cf)		<u>138.32</u>		

Notes:



## STRUCTURAL CONCRETE MIX DESIGN SUBMISSION

Agency Use Only	
Mix ID	SC00-B-0
Mix Design #	
Approved by	
Approved Date	
Spec Book Year	2011

Mix designs are valid for a 12 month period from date of approval or unless there is a change in material, material property or design parameter.

Concrete class: 2013+ Class B						Mix ID	SC00-B-0
Additional Description With Fly Ash						Mix Design #	
Ready Mix Supplier: CARRARA, JP & SONS INC - E MIDDLEBURY, VT						Approved by	
Designed By Chuck French						Approved Date	
Design strength 3500 PSI						Spec Book Year	2011
Mix Design Style: Conventional						Mix designs are valid for a 12 month period from date of approval or unless there is a change in material, material property or design parameter.	
Agg weight - SSD or Dry: SSD							
Cement:			Specific Gravity	3.150	489 lb/cy	2.49 cf	
701.02	Source:	LEHIGH NORTHEAST CEMENT CO - GLENSSFALLS, NY					
	Brand Name:	Type II					
Cement Type III:			Specific Gravity		lb/cy	0.00 cf	
701.04	Source:						
	Brand Name:						
Blended Cement:			Specific Gravity		lb/cy	0.00 cf	
701.06	Source:						
	Brand Name:						
Cement with Slag:			Specific Gravity		lb/cy	0.00 cf	
701.07	Source:						
	Brand Name:						
Pozzolan:			Specific Gravity		lb/cy	0.00 cf	
725.03(a)	Source:						
	Brand Name:						
Fly Ash:			Specific Gravity	2.320	122 lb/cy	0.84 cf	
725.03(a)	Source:	HEADWATERS RESOURCES - BRAYTON POINT, MA					
	Brand Name:	Class F					
Silica Fume:			Specific Gravity		lb/cy	0.00 cf	
725.03(b)	Source:						
	Brand Name:						
Slag:			Specific Gravity		lb/cy	0.00 cf	
725.03(c)	Source:						
	Brand Name:						
Water				33 gals	275.4 lb/cy	4.41 cf	
Air Content Target				7.0 %		1.89 cf	
Coarse Aggregate 3/8"		Absorption		Specific Gravity		0.00 cf	
704.02A	Source:						
Coarse Aggregate 3/4"		Absorption	1.24	Specific Gravity	2.580	1640 lb/cy	10.19 cf
704.02B	Source:	CARRARA JP - E MIDDLEBURY, VT					
Coarse Aggregate 1 1/2"		Absorption		Specific Gravity		lb/cy	0.00 cf
704.02C	Source:						
Fine Aggregate:		Absorption	0.98	Specific Gravity	2.613	1171 lb/cy	7.18 cf
704.01	Source:	CARRARA JP - E MIDDLEBURY, VT					
		Fineness Modulus					
Air Entrainment Admixture				Specific Gravity		5 oz/cy	
725.02(b)	Source:	W.R. GRACE & CO. - CAMBRIDGE, MA					
	Brand Name:	Darex II					
Retarder Admixture:				Specific Gravity		2 oz/cwt	
725.02(c)	Source:	W.R. GRACE & CO. - CAMBRIDGE, MA					
	Brand Name:	Daratard 17					
High Range Water Reducer Admixture:				Specific Gravity		6 oz/cwt	
725.02(h)	Source:	W.R. GRACE & CO. - CAMBRIDGE, MA					
	Brand Name:	ADVA 140M					
Other Admixtures:				Specific Gravity		0.00 cf	
	Source:						
	Brand Name:						
				Specific Gravity		0.00 cf	
	Source:						
	Brand Name:						
				Specific Gravity		0.00 cf	
	Source:						
	Brand Name:						
TOTAL			47.513		3697 lb	27.00 cf	
Maximum Water/Cementitious Ratio				0.49			
Maximum Water (gal/cy)				35.9			
Slump Min/Max (inch)				2.0 min	4.0 max		
Air Content Min/Max (%)				5.5 min	8.5 max		
Design Unit Wt. (lb/cf)				136.94			

Notes:

STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
MATERIAL AND RESEARCH SECTION - STRUCTURAL CONCRETE UNIT

STRUCTURAL CONCRETE MIX DESIGN SUBMISSION

Concrete class: Flowable Fill  
Additional Description: With Fly Ash  
Ready Mix Supplier: CARRARA, JP & SONS INC - E MIDDLEBURY, VT  
Designed By: Chuck French  
Design strength: 115 PSI  
Mix Design Style: Flowable Fill  
Agg weight - SSD or Dry: SSD

Agency Use Only	
Mix ID	FF00-0
Mix Design #	
Approved by	
Approved Date	
Spec Book Year	2011

Mix designs are valid for a 12 month period from date of approval or unless there is a change in material, material property or design parameter.

<b>Cement:</b>	Specific Gravity	<u>3.150</u>	<u>100</u> lb/cy	<u>0.51</u> cf
701.02 Source: <u>LEHIGH NORTHEAST CEMENT CO - GLENSFALLS, NY</u>				
Brand Name: <u>Type II</u>				
<b>Cement Type III:</b>	Specific Gravity		lb/cy	0.00 cf
701.04 Source: _____				
Brand Name: _____				
<b>Blended Cement:</b>	Specific Gravity		lb/cy	0.00 cf
701.06 Source: _____				
Brand Name: _____				
<b>Cement with Slag:</b>	Specific Gravity		lb/cy	0.00 cf
701.07 Source: _____				
Brand Name: _____				
<b>Pozzolan:</b>	Specific Gravity		lb/cy	0.00 cf
725.03(a) Source: _____				
Brand Name: _____				
<b>Fly Ash:</b>	Specific Gravity	<u>2.320</u>	<u>200</u> lb/cy	<u>1.38</u> cf
725.03(a) Source: <u>HEADWATERS RESOURCES - BRAYTON POINT, MA</u>				
Brand Name: <u>Class F</u>				
<b>Silica Fume:</b>	Specific Gravity		lb/cy	0.00 cf
725.03(b) Source: _____				
Brand Name: _____				
<b>Slag:</b>	Specific Gravity		lb/cy	0.00 cf
725.03(c) Source: _____				
Brand Name: _____				
<b>Water</b>		<u>27</u> gals	<u>225.3</u> lb/cy	<u>3.61</u> cf
<b>Air Content Target</b>		<u>30.0</u> %		<u>8.1</u> cf
<b>Coarse Aggregate 3/8"</b>	Absorption		lb/cy	0.00 cf
704.02A Source: _____				
<b>Coarse Aggregate 3/4"</b>	Absorption		lb/cy	0.00 cf
704.02B Source: _____				
<b>Coarse Aggregate 1 1/2"</b>	Absorption		lb/cy	0.00 cf
704.02C Source: _____				
<b>Fine Aggregate:</b>	Absorption	<u>0.98</u>	Specific Gravity	<u>2.613</u>
704.01 Source: <u>CARRARA JP - E MIDDLEBURY, VT</u>			Fineness Modulus	
			<u>2185</u> lb/cy	<u>13.40</u> cf
<b>Air Entrainment Admixture</b>	Specific Gravity		<u>3</u> oz/cy	
725.02(b) Source: <u>W.R. GRACE &amp; CO. - CAMBRIDGE, MA</u>				
Brand Name: <u>Darafill</u>				
<b>Retarder Admixture:</b>	Specific Gravity		oz/cwt	
725.02(c) Source: _____				
Brand Name: _____				
<b>High Range Water Reducer Admixture:</b>	Specific Gravity		oz/cwt	
725.02(h) Source: _____				
Brand Name: _____				
<b>Other Admixtures:</b>	Specific Gravity		0.00	cf
Source: _____				
Brand Name: _____				
Source: _____	Specific Gravity		0.00	cf
Brand Name: _____				
Source: _____	Specific Gravity		0.00	cf
Brand Name: _____				
	<b>TOTAL</b>	<u>61.933</u>	<u>2710</u> lb	<u>27.00</u> cf

Maximum Water/Cementitious Ratio 0.83  
Maximum Water (gal/cy) 29.8  
Slump Min/Max (inch) \_\_\_\_\_ min 7.0 max  
Air Content Min/Max (%) 10.0 min 40.0 max  
Design Unit Wt. (lb/cf) 100.38

Notes:

STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
MATERIAL AND RESEARCH SECTION - STRUCTURAL CONCRETE UNIT

STRUCTURAL CONCRETE MIX DESIGN SUBMISSION

Concrete class: 2013+ Class C  
Additional Description: With Fly Ash  
Ready Mix Supplier: CARRARA, JP & SONS INC - E MIDDLEBURY, VT  
Designed By: Chuck French  
Design strength: 3000 PSI  
Mix Design Style: Conventional  
Agg weight - SSD or Dry: SSD

Agency Use Only	
Mix ID	SC00-C-0
Mix Design #	
Approved by	
Approved Date	
Spec Book Year	2011

Mix designs are valid for a 12 month period from date of approval or unless there is a change in material, material property or design parameter.

<b>Cement:</b>		Specific Gravity	<u>3.150</u>	<u>451</u> lb/cy	<u>2.29</u> cf
701.02	Source: <u>LEHIGH NORTHEAST CEMENT CO - GLENSFALLS, NY</u>				
	Brand Name: <u>Type II</u>				
<b>Cement Type III:</b>		Specific Gravity			<u>0.00</u> cf
701.04	Source: _____				
	Brand Name: _____				
<b>Blended Cement:</b>		Specific Gravity			<u>0.00</u> cf
701.06	Source: _____				
	Brand Name: _____				
<b>Cement with Slag:</b>		Specific Gravity			<u>0.00</u> cf
701.07	Source: _____				
	Brand Name: _____				
<b>Pozzolan:</b>		Specific Gravity			<u>0.00</u> cf
725.03(a)	Source: _____				
	Brand Name: _____				
<b>Fly Ash:</b>		Specific Gravity	<u>2.320</u>	<u>113</u> lb/cy	<u>0.78</u> cf
725.03(a)	Source: <u>HEADWATERS RESOURCES - BRAYTON POINT, MA</u>				
	Brand Name: <u>Class F</u>				
<b>Silica Fume:</b>		Specific Gravity			<u>0.00</u> cf
725.03(b)	Source: _____				
	Brand Name: _____				
<b>Slag:</b>		Specific Gravity			<u>0.00</u> cf
725.03(c)	Source: _____				
	Brand Name: _____				
<b>Water</b>			<u>32</u> gals	<u>267</u> lb/cy	<u>4.28</u> cf
<b>Air Content Target</b>			<u>5.5</u> %		<u>1.485</u> cf
<b>Coarse Aggregate 3/8"</b>	Absorption _____	Specific Gravity			<u>0.00</u> cf
704.02A	Source: _____				
<b>Coarse Aggregate 3/4"</b>	Absorption <u>1.24</u>	Specific Gravity <u>2.580</u>		<u>1710</u> lb/cy	<u>10.62</u> cf
704.02B	Source: <u>CARRARA JP - E MIDDLEBURY, VT</u>				
<b>Coarse Aggregate 1 1/2"</b>	Absorption _____	Specific Gravity _____			<u>0.00</u> cf
704.02C	Source: _____				
<b>Fine Aggregate:</b>	Absorption <u>0.98</u>	Specific Gravity <u>2.613</u>		<u>1230</u> lb/cy	<u>7.55</u> cf
704.01	Source: <u>CARRARA JP - E MIDDLEBURY, VT</u>	Fineness Modulus _____			
<b>Air Entrainment Admixture</b>		Specific Gravity _____		<u>3.5</u> oz/cy	
725.02(b)	Source: <u>W.R. GRACE &amp; CO. - CAMBRIDGE, MA</u>				
	Brand Name: <u>Darex II</u>				
<b>Retarder Admixture:</b>		Specific Gravity _____		<u>2</u> oz/cwt	
725.02(c)	Source: <u>W.R. GRACE &amp; CO. - CAMBRIDGE, MA</u>				
	Brand Name: <u>Daratard 17</u>				
<b>High Range Water Reducer Admixture:</b>		Specific Gravity _____		<u>6</u> oz/cwt	
725.02(h)	Source: <u>W.R. GRACE &amp; CO. - CAMBRIDGE, MA</u>				
	Brand Name: <u>ADVA 140M</u>				
<b>Other Admixtures:</b>		Specific Gravity _____		<u>0.00</u> cf	
	Source: _____				
	Brand Name: _____				
	Source: _____	Specific Gravity _____		<u>0.00</u> cf	
	Brand Name: _____				
	Source: _____	Specific Gravity _____		<u>0.00</u> cf	
	Brand Name: _____				
	Source: _____				
	Brand Name: _____				
		<b>TOTAL</b>	<u>45.013</u>	<u>3771</u> lb	<u>27.00</u> cf

Maximum Water/Cementitious Ratio 0.49  
Maximum Water (gal/cy) 33.1  
Slump Min/Max (inch) 2.0 min 4.0 max  
Air Content Min/Max (%) 4.0 min 7.0 max  
Design Unit Wt. (lb/cf) 139.67

Notes:

STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
MATERIAL AND RESEARCH SECTION - STRUCTURAL CONCRETE UNIT

STRUCTURAL CONCRETE MIX DESIGN SUBMISSION

Concrete class: Grout/Mortar  
Additional Description \_\_\_\_\_  
Ready Mix Supplier: CARRARA, JP & SONS INC - E MIDDLEBURY, VT  
Designed By: Chuck French  
Design strength: 4000 PSI  
Mix Design Style: Type IV Mortar/Grout  
Agg weight - SSD or Dry: SSD

Agency Use Only	
Mix ID	GM00-0
Mix Design #	
Approved by	
Approved Date	
Spec Book Year	2011

Mix designs are valid for a 12 month period from date of approval or unless there is a change in material, material property or design parameter.

<b>Cement:</b>	Specific Gravity	<u>3.150</u>	<u>940</u> lb/cy	<u>4.78</u> cf
701.02 Source: <u>LEHIGH NORTHEAST CEMENT CO - GLENSFALLS, NY</u>				
Brand Name: <u>Type II</u>				
<b>Cement Type III:</b>	Specific Gravity		lb/cy	0.00 cf
701.04 Source: _____				
Brand Name: _____				
<b>Blended Cement:</b>	Specific Gravity		lb/cy	0.00 cf
701.06 Source: _____				
Brand Name: _____				
<b>Cement with Slag:</b>	Specific Gravity		lb/cy	0.00 cf
701.07 Source: _____				
Brand Name: _____				
<b>Pozzolan:</b>	Specific Gravity		lb/cy	0.00 cf
725.03(a) Source: _____				
Brand Name: _____				
<b>Fly Ash:</b>	Specific Gravity		lb/cy	0.00 cf
725.03(a) Source: _____				
Brand Name: _____				
<b>Silica Fume:</b>	Specific Gravity		lb/cy	0.00 cf
725.03(b) Source: _____				
Brand Name: _____				
<b>Slag:</b>	Specific Gravity		lb/cy	0.00 cf
725.03(c) Source: _____				
Brand Name: _____				
<b>Water</b>				
<b>Air Content Target</b>		<u>45</u> gals	<u>375.5</u> lb/cy	<u>6.02</u> cf
		<u>2.0</u> %		<u>0.54</u> cf
<b>Coarse Aggregate 3/8"</b>	Absorption		lb/cy	0.00 cf
704.02A Source: _____				
<b>Coarse Aggregate 3/4"</b>	Absorption		lb/cy	0.00 cf
704.02B Source: _____				
<b>Coarse Aggregate 1 1/2"</b>	Absorption		lb/cy	0.00 cf
704.02C Source: _____				
<b>Fine Aggregate:</b>	Absorption	<u>0.98</u>	Specific Gravity	<u>2.613</u>
704.01 Source: <u>CARRARA JP - E MIDDLEBURY, VT</u>			Fineness Modulus	
			<u>2553</u> lb/cy	<u>15.66</u> cf
<b>Air Entrainment Admixture</b>	Specific Gravity		oz/cy	
725.02(b) Source: <u>SIKA CORPORATION - LYNDHURST, NJ</u>				
Brand Name: _____				
<b>Retarder Admixture:</b>	Specific Gravity		3 oz/cwt	
725.02(c) Source: <u>W.R. GRACE &amp; CO. - CAMBRIDGE, MA</u>				
Brand Name: <u>Daratard 17</u>				
<b>High Range Water Reducer Admixture:</b>	Specific Gravity		10 oz/cwt	
725.02(h) Source: <u>W.R. GRACE &amp; CO. - CAMBRIDGE, MA</u>				
Brand Name: <u>ADVA 140M</u>				
<b>Other Admixtures:</b>				
<b>Specific performance admixture</b>	Specific Gravity		1.5 lb/cy	0.00 cf
725.02(i) Source: <u>SIKA CORPORATION - LYNDHURST, NJ</u>				
Brand Name: <u>Interplast N</u>				
	Specific Gravity			0.00 cf
Source: _____				
Brand Name: _____				
	Specific Gravity			0.00 cf
Source: _____				
Brand Name: _____				
<b>TOTAL</b>		<u>49.613</u>	<u>3870</u> lb	<u>27.00</u> cf

Maximum Water/Cementitious Ratio 0.43  
Maximum Water (gal/cy) 48.4  
Slump Min/Max (inch) 4.0 min 8.0 max  
Air Content Min/Max (%) 0.0 min 4.0 max  
Design Unit Wt. (lb/cf) 143.33

Notes:



February 19, 2015

Report No. 25.30620.001-2

Mr. Ben Cota  
JP Carrara & Sons  
2464 Case Street  
Middlebury, VT 05753

Re: Aggregate Test Results

Gentlemen:

The following are test results of samples of aggregate as delivered to this laboratory on January 23, 2015.

1. Sample Description

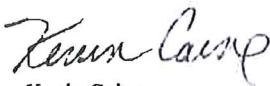
<u>Sample No.</u>	<u>Description</u>	<u>Source</u>
C-36a	3/4" Stone	JP Carrara Middlebury, VT
C-36b	Concrete Sand	JP Carrara Middlebury, VT
  
2. Washed Sieve Analysis (% passing by weight)

<u>Sieve Size (mm)</u>	<u>C-36a</u>	<u>C-36b</u>
3/4" (19.0)	100	
1/2 (12.5)	64	
3/8 (9.5)	37	100
#4 (4.75)	2	95
8 (2.36)	1	84
16 (1.18)	1	70
30 (.600)		49
50 (.300)		22
100 (.150)		8
200 (.075)	0.6	2.5
Fineness Modulus		2.73
  
3. Specific Gravity & Absorption (AASHTO T84, AASHTO T86)

<u>Test</u>	<u>C-33a</u>	<u>C-33b</u>
Specific Gravity	2.580	2.613
Absorption (%)	1.24	0.98

Should you have any questions or require additional information, please do not hesitate to call.

Sincerely,



Kevin Caine  
Laboratory Manager

KC/sjm